

BRIEF COMMUNICATION

A replacement family-group name among fossil Neuroptera (Insecta)

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Abstract. The nomenclature of the enigmatic fossil family Rafaelidae is summarized and its status as a *nomen invalidum* requiring replacement is recognized, due to homonymy of its type genus, *Rafaelia* Nel *et al.* (*nec Rafaelia* Townsend). The replacement family-group name is made available as **Rafaelianidae** Engel & Nel, new name, based on the type genus *Rafaeliana* Nel *et al.*, which is itself a former replacement for the junior *Rafaelia*.

INTRODUCTION

Nel *et al.* (2005) proposed a new family of peculiar Neuroptera based on two species of antlion-like insects from the Early Cretaceous Crato Formation of northeastern Brazil. The material was not ideally preserved, with the wings folded, such that affinities between the fossils and other subsets of Neuroptera were ambiguous, but they appeared to belong within the Myrmeleontiformia. The fossils were attributed to a new genus *Rafaelia*, and a family was erected to accommodate them as Rafaelidae. The family-group name is improperly formed, because the combining stem of *Rafaelia* is *Rafaeli-* and not *Rafael-*. Acceptance of originally formed stems, even if they are incorrect,

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is to be maintained if the name has a correctly formed suffix and simultaneously was formed from the name of the type genus as though it were an arbitrary combination of letters (ICZN, 1999: Article 29.4). If the name were treated as an arbitrary combination of letters, then the family-group name would have been formed as *Rafaeliidae*, which was not the case and so the stem should be corrected to form *Rafaeliidae*.

However, the generic name *Rafaelia* is also a junior homonym of a name proposed earlier for a group of flies (Townsend, 1917), and was therefore replaced by *Rafaeliana* (Nel *et al.*, 2006). In replacing the generic name, Nel *et al.* (2006) indicated that although their genus *Rafaelia* served as the type genus for a family-group name, homonymy did not impact the familial name and retained it as *Rafaelidae*. It is true that validity of family-group names is not impacted by the synonymy of their type genera, as long as the type genus is an available name (ICZN, 1999: Article 40.1). However, homonymy of the type genus is a completely different matter. ICZN (1999) Article 39 clearly states, "The name of a family-group taxon is invalid if the name of its type genus is a junior homonym..." Family-group names remain valid if the type genus is considered to be a junior synonym, but when the type genus is a junior homonym, then it must be replaced by the next oldest available family-group name or a replacement name based on the new valid name for the genus impacted. In this case, the currently valid name for the genus is *Rafaeliana*, which must serve as the basis for a replacement family-group name. Such a replacement is here made available and the nomenclatural details for the family- and genus-group names impacted are summarized.

TAXONOMY

Rafaelianidae Engel & Nel, new name

ZooBank: urn:lsid:zoobank.org:act:113F57E0-5B6A-4D59-BEC0-88CAF0F8097C

Rafaelidae Nel, Bechly, Garrouste, Pohl, & Escuillié, 2005: 845, *nomen imperfectum* (*recte* *Rafaeliidae*) *et nomen invalidum* (owing to junior homonymy of type genus). Type genus: *Rafaelia* Nel, Bechly, Garrouste, Pohl, & Escuillié, 2005, *nomen praeoccupatum* (*nec Rafaelia* Townsend, 1917).

TYPE GENUS: *Rafaeliana* Nel, Bechly, Garrouste, Pohl, & Escuillié, 2006.

DIAGNOSIS: As outlined by Nel *et al.* (2005) for 'Rafaelidae'.

Genus *Rafaeliana* Nel *et al.*

Rafaelia Nel, Bechly, Garrouste, Pohl, & Escuillié, 2005: 846, *nomen praeoccupatum* (*nec Rafaelia* Townsend, 1917). Type species: *Rafaelia maxima* Nel, Bechly, Garrouste, Pohl, & Escuillié, 2005, by original designation.

Rafaeliana Nel, Bechly, Garrouste, Pohl, & Escuillié, 2006: 190, *nomen novum pro Rafaelia* Nel, Bechly, Garrouste, Pohl, & Escuillié, 2005, *nomen praeoccupatum* (*nec Rafaelia* Townsend, 1917).

INCLUDED SPECIES: *Rafaeliana maxima* (Nel *et al.*) and *R. minima* (Nel *et al.*), both from the Early Cretaceous Crato Formation in northeastern Brazil.

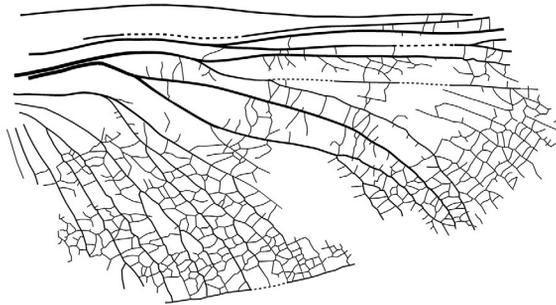
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ZooBank: urn:lsid:zoobank.org:pub:615E2192-8812-40DB-98B3-A0233B321871



Pharciphyzelus lacefieldi Beckemeyer & Engel, 2011

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